



Zero Net
— Energy Farms —

CDFA, World Ag Expo

February 16, 2017, Tulare CA

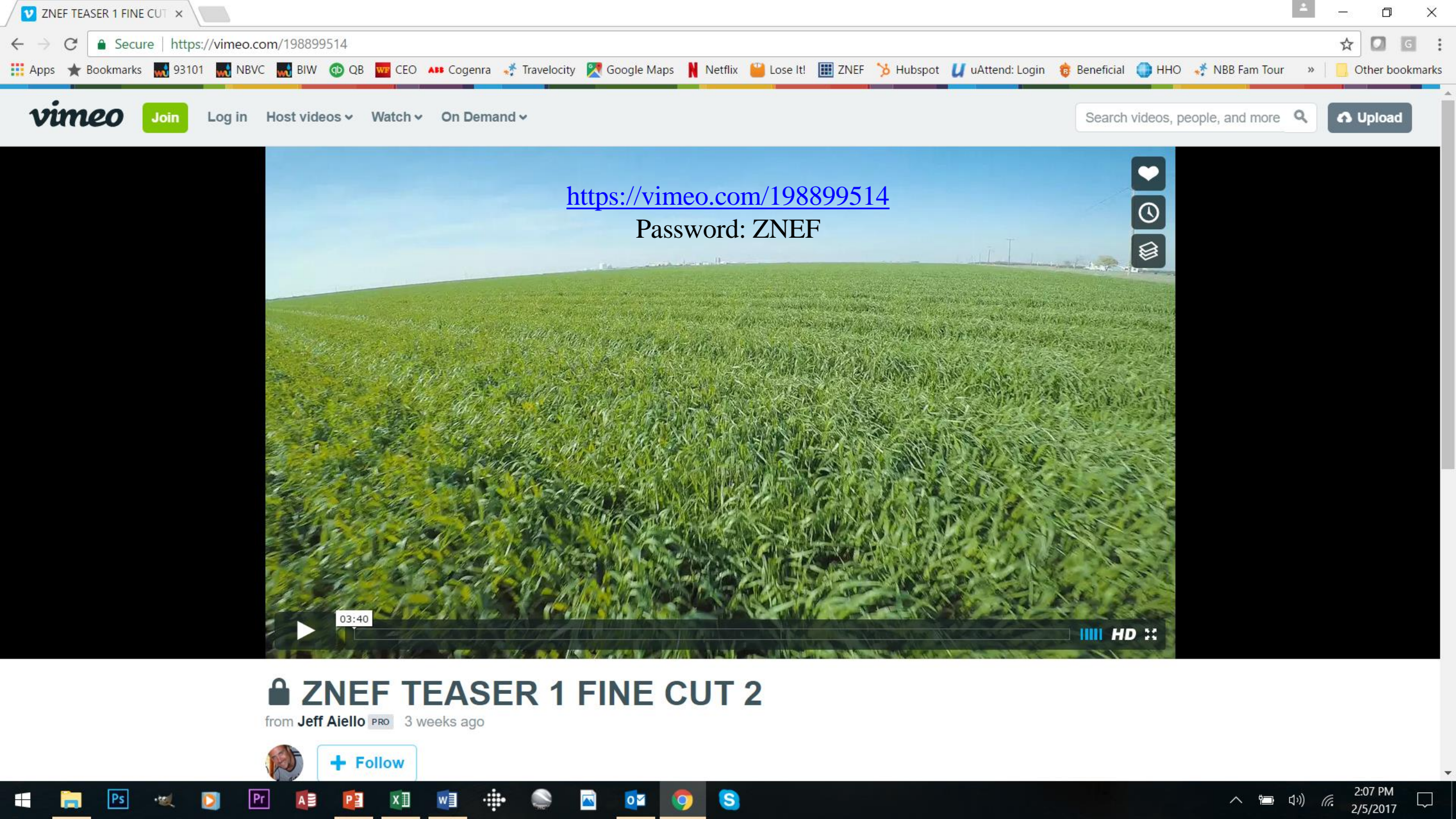
Biodico Westside, Five Points, CA



Safe Harbor

A full moon hangs in a dark, cloudy sky above a lighthouse situated on a rocky coastline. The lighthouse is a tall, white, cylindrical tower with a glass-enclosed lantern room at the top. The sea is a deep blue, and distant mountains are visible on the horizon.

The following information contains or may be deemed to contain “forward-looking statements.” By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend upon circumstances that may or may not occur in the future. Future results of the company may possibly vary from the results expressed or implied herein by forward-looking statements. The company undertakes no obligation to update or revise any forward-looking statements.



ZNEF TEASER 1 FINE CUT 2

from Jeff Aiello PRO 3 weeks ago



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Thank you to our many collaborators

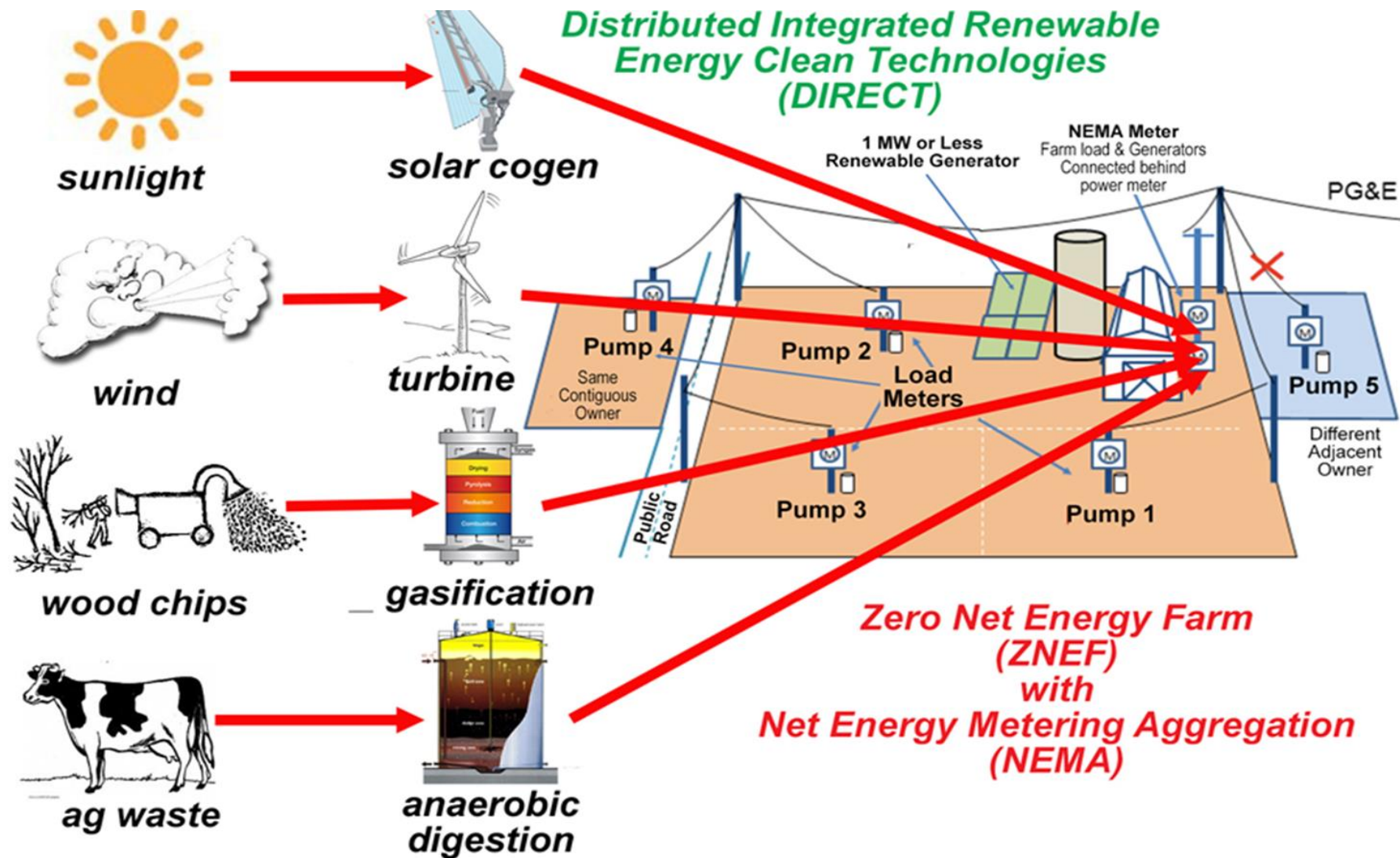


	Collaborators (in alphabetical order)	Role
	18Thirty Entertainment	Team Member
	American Air Liquide	Team Member
	Biodico	Lead
	City of Huron	Team Member
	City of San Joaquin	Team Member
	County of Fresno	Team Member
	Fresno County Council of Governments	Team Member
	Fresno County Fire	Team Member
	PondelWilkinson, Inc.	Team Member
	Red Rock Ranch, Inc.	Team Member
	San Joaquin Valley Air Pollution Control District	Team Member
	San Joaquin Valley Clean Energy Cluster (CSU Fresno)	Team Member
	San Joaquin Valley Clean Energy Organization	Team Member
	US Navy, NAVFAC EXWC	Team Member
	West Hills Community College District	Team Member

The Basic Concept

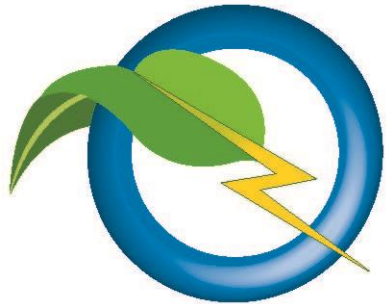


*Enabling Farms to
Generate All of Their
Own Fuel & Power
from On-site
Renewable Resources,
while Reducing
Greenhouse Gases and
Providing Meaningful
Jobs & Economic
Development*

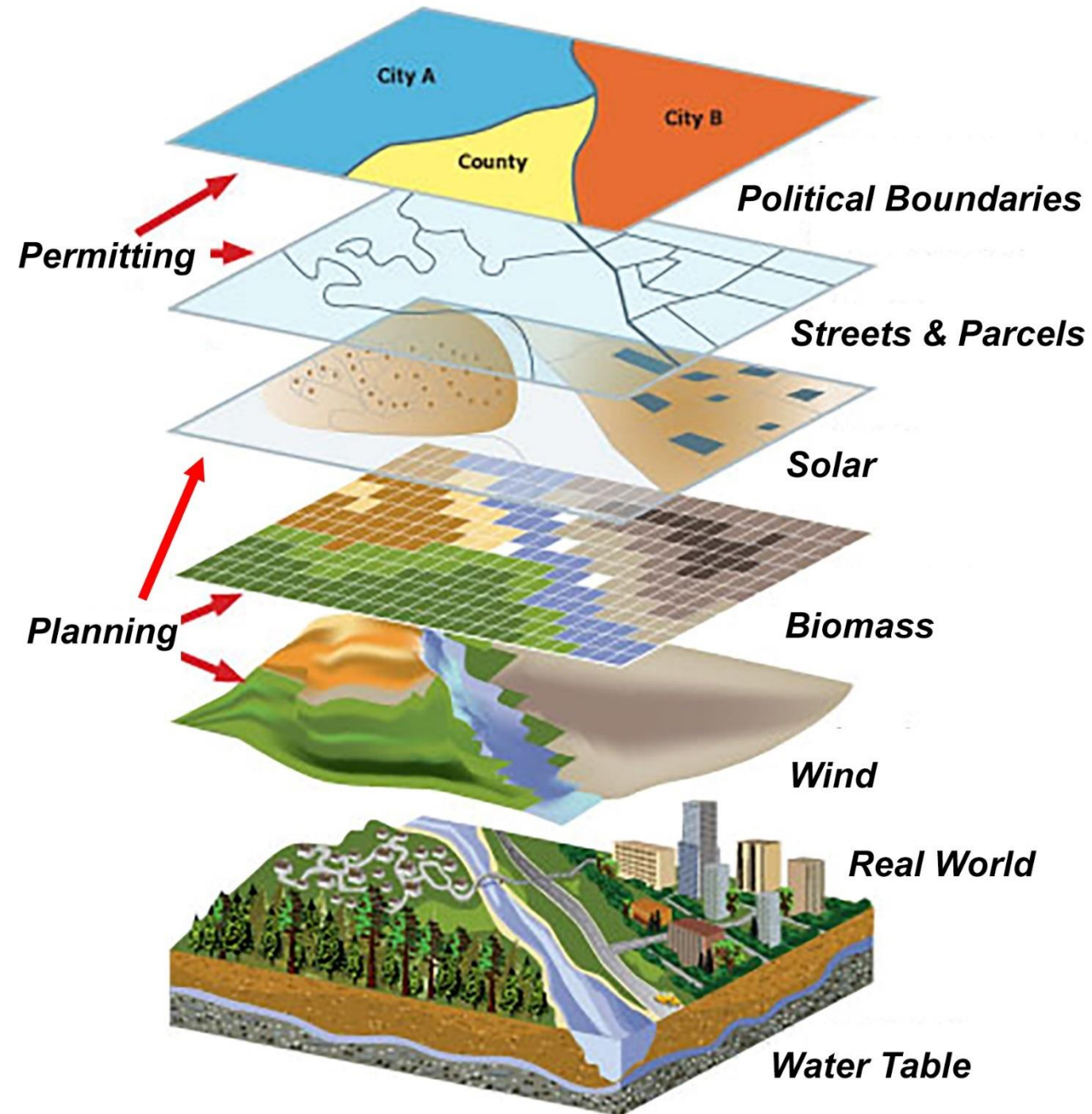


Objectives

- Resource Assessment
- Technology Trade Study
- Permitting
- Financing
- Create user friendly interface for guiding agricultural interests through the development process



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W Cadillac Ave

Pivot Irrigation
#1003202413

Pivot Irrigation
#1009547191

Red Rock Ranch, 1,300 acres

California Agriculture 25,000,000 acres

Multiplier of almost 20,000 to 1

- Two Project Centers
1. Biodico Westside Site
 2. Red Rock Ranch Headquarters

Section 24

Section 19

Account	Meter #	Meter Service in kWh	2015 Average Monthly Use in kWh		
			On Peak	Part Peak	Off Peak
1336831136-4	1008829078	30	177.77	465.10	963.63
3269674818-8	1461R8	628	851.89	1,120.00	4,575.14
4125193304-4	6PO129	30	277.65	447.15	2,193.15
	1003202413	45	373.55	1,040.40	3,491.40
	1009836617	30	339.84	586.22	2,488.42
8865086604-2	1009501838	261	9,056.95	25,490.86	56,745.87
	1009547191	89	374.43	1,067.88	3,392.78
	1009996304	37	377.57	421.53	2,366.90
Total Average Monthly Energy TOU			11,829.65	30,639.15	76,217.30
Total Average Annual Energy TOU			141,955.85	367,669.75	914,607.61
Total Average Hourly Energy TOU			16.21	41.97	104.41
Total Average Monthly Energy Use				118,686.10	
Total Average Annual Energy Use				1,424,233.21	
Total Average Hourly Energy Use				162.58	

#101000708

Biodico Westside

Water Purifier
#1008829078

Irrigation
#1009996304

Well
#1009501838
Irrigation
#1009836617

Pivot Irrigation
#6PO129

Cold Storage
#1461R8

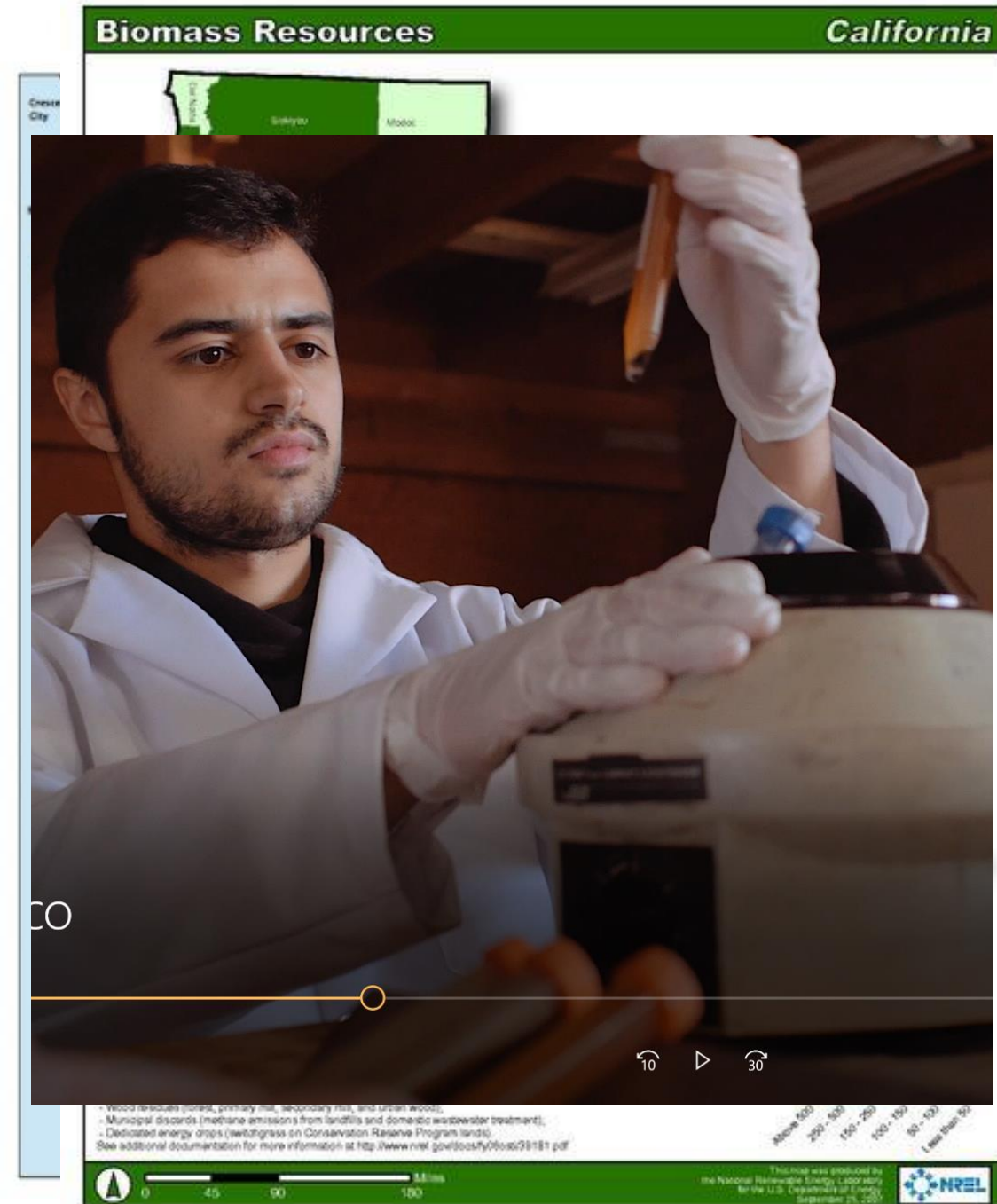
W Oakland Ave

Section 25

Resource Assessment

- Solar is very good but needs to be ag appropriate
- Wind is adequate, but concern for birds
- Biomass is plentiful in the form of wood chips from orchards and vineyards – open burning
- Dairy Digesters have a huge potential, but lots of problems

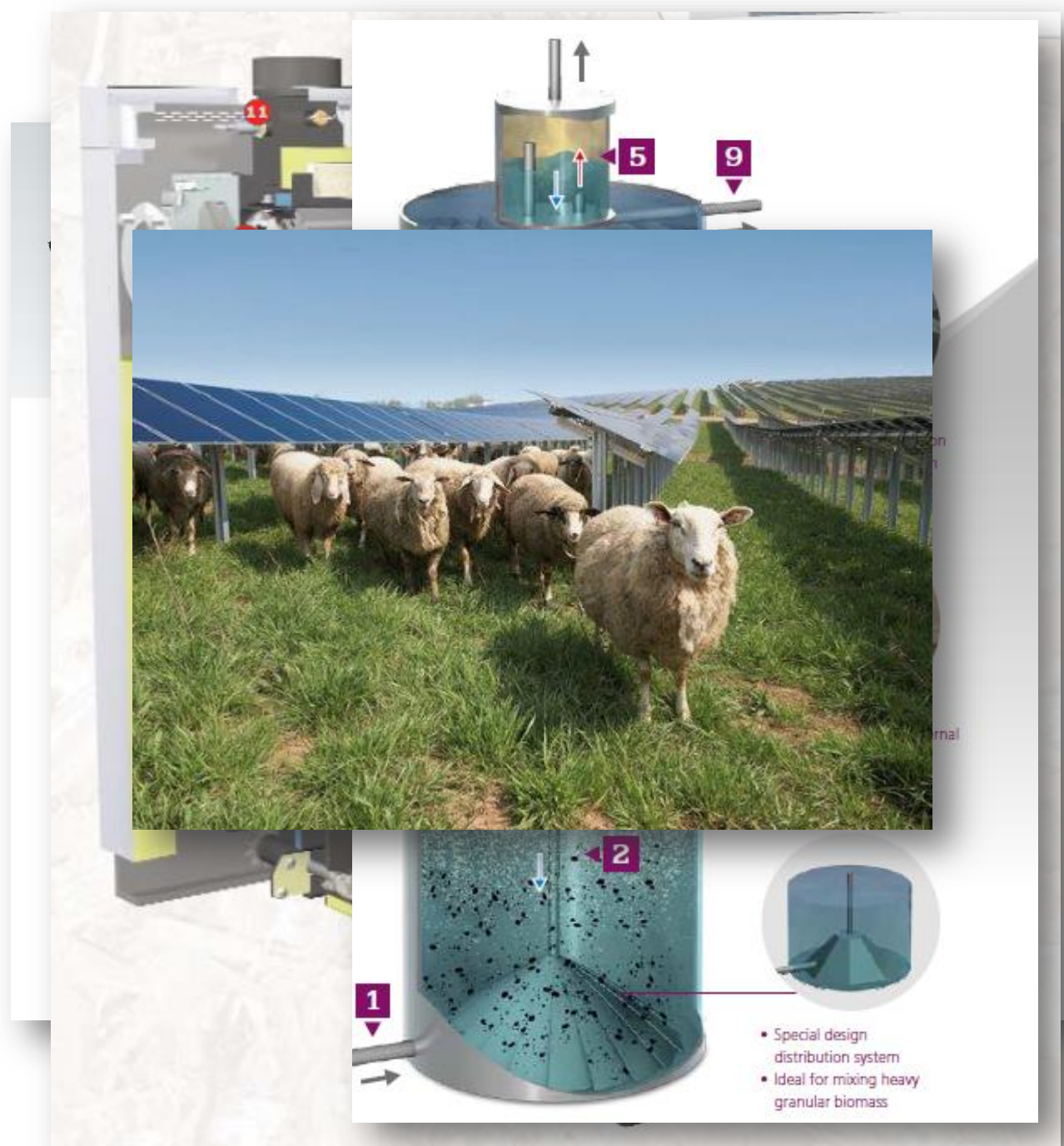
There are sufficient resources to move ahead with solar, wind, gasification and anaerobic digestion



Ag Appropriate Technology

- Solar Intercropping
- Solar Wind Structure
- Wood Chip Boiler
- Anaerobic Digestion
 - 1) Dairy Digesters can be greatly improved – “Doing the same thing, and expecting different results.”
 - 2) Hydraulic Retention Time – 20-30 days vs less than 24 hours
 - 3) Organic Loading Rate – 20% capacity vs 100% capacity
 - 4) Automation & Remote Sensing
 - 5) Need for demonstration center that is dairy neutral
 - 6) Draft Grant Solicitation only allows for on-dairy projects – needs to be changed to allow dairy neutral locations

The technologies chosen are the best available for the resources identified





**Anaerobic
Digestion**

**Renewable
Energy**



Gasification

**Biodiesel
Production**

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**Community
Development**

Algaculture



**Sustainable
Water**

Intercropping

